

Claims

What is claimed is:

1. A gain control method for the initial cell searching in TD-SCDMA mobile communication system, said gain control method comprising:

Step A: the user terminal receiving data in the maximum receiving gain at the selected carrier frequency;

Step B: recording the received data of a plurality of subframes;

Step C: determining the DwPTS position of each received subframe by using the time window decision method;

Step D: performing the succeeding procedure of the initial cell searching and returning to execute Step A subsequently when the DwPTS positions of the most received subframes can be determined, and executing Step E when the DwPTS positions of the most received subframes can not be determined; and

Step E: judging whether the receiver is in saturation, wherein, returning to execute Step A subsequently when the receiver is not in saturation, and decreasing the receiving gain by a step length and returning to execute Step B subsequently when the receiver is in saturation.

2. A gain control method for the initial cell searching in TD-SCDMA mobile communication system as defined in claim 1, wherein

after said method returning to execute Step A subsequently in Step D and Step E, Step A re-selects another carrier frequency from all possible carrier frequencies until each possible carrier frequency is selected and then ends the initial cell searching.

3. A gain control method for the initial cell searching in TD-SCDMA mobile communication system as defined in claim 1, wherein

in Step D, judging whether the DwPTS positions whose number exceeds half of the total number of DwPTS positions in the received subframes are determined so as to determine that the DwPTS positions of the most received subframes can

be determined; and in Step D, judging whether the DwPTS positions whose number exceeds half of the total number of DwPTS positions in the received subframes are not determined so as to determine that the DwPTS positions of the most received subframes can not be determined.

4. A gain control method for the initial cell searching in TD-SCDMA mobile communication system as defined in claim 3, wherein

said DwPTS positions whose number exceeds half of the total number of DwPTS positions in the received subframes are determined continuously or at intervals.

5. A gain control method for the initial cell searching in TD-SCDMA mobile communication system as defined in claim 1, wherein

in Step D, said determined DwPTS positions whose number exceeds half of the total number of DwPTS positions in the received subframes are considered as the DwPTS positions of subframes.

6. A gain control method for the initial cell searching in TD-SCDMA mobile communication system as defined in claim 1, wherein

in Step E, if the receiver is judged not to be in saturation and the received signal is environmental interference, there is no base station for working at present carrier frequency.

7. A gain control method for the initial cell searching in TD-SCDMA mobile communication system as defined in claim 1, wherein

in Step E, the receiving gain is decreased by a step length ranging from 6dB to 24dB.